Narumi NAKATO*：Notes on chromosomes of Japanese pteridophytes (3)**

中藤成実*: 日本産シダ植物の染色体ノート (3)

29) Colysis wrightii (Hook.) Ching (Figs. 1, 2)
2n=74 (2x)：Isl. Ishigakijima, Okinawa Pref. (no. 5329001).
2n=75 (2x)：Isl. Amamioshima, Kagoshima Pref. (no. 532901).

Previously reported as n=36 and 2n=72 (2x) from Kagoshima Pref. and Okinawa Pref. (Mitui 1967, 1976, Kurita 1968, Takei 1982). The base chromosome number of the genus Colysis has been reported as x=36. However, the present plants showed aneuploid numbers. This species has long-creeping rhizomes and propagates vegetatively by them. Such habit is in an advantageous condition to maintain such aneuploids.

30) Diplazium amamianum Tagawa (Fig. 3)
2n=82 (2x)：Isl. Amamioshima, Kagoshima Pref. (nos. 532902-4).

Previously reported as n=41 (2x) from the same island (Shimura & Matsumoto 1976). This species is endemic to Isl. Amamioshima. As the present plants produced 64 spores in a sporangium, their reproduction type seem to be sexual.

31) Drymotaenium miyoshianum (Makino) Makino (Fig. 4)
2n=104 (4x?)：Shimoina-gun, Nagano Pref. (no. 532905).

Previously reported as n=36 (2x) from Taiwan (Tsai 1973). Drymotaenium is a monotypic genus with the sole species distributed in China, Taiwan and Japan, and is considered to be related to Pleopeltis (incl. Lepisorus) representing wide aneuploid base numbers such as x=22, 23, 25, 26, 34-37, 39, 47 (cf. Walker 1984). The present plant clearly showed 2n=104 which is probably regarded as either a tetraploid of x=26 or a diploid of x=52. This supposition makes a marked contrast with that reported by Tsai (1973) in Taiwanese plants (x=36). A similar example has been reported in a related species, Lepisorus thunbergianus (Kaulf.) Ching, in which Japanese plants were reported.

* Shinjuku High School, Sendagaya 6-2-1, Shibuya-ku, Tokyo 151. 東京都立新宿高等学校.
1) Specimen numbers are those in TNS.
to be based on $x=25$ (diploid, triploid and tetraploid with some aneuploids) (Nakato et al. 1983), but Indian plants to be based on $x=36$ (diploid) (Mahabale & Kamble 1981). Further systematic studies are necessary to understand the relationships between plants in Japan and other areas in these species.

32) *Hypolepis punctata* (Thunb.) Mett. ex Kuhn (Fig. 5)

$2n=200$ (8x): Simizu-shi, Shizuoka Pref. (no. 532906).

Previously reported as $n=52$ from Taiwan (Tsai 1973) and India (Ghatak 1977) $n=98$ from Japan (Kurita 1972, Mitui 1975, 1976), $n=c100$ from Malaya (Manton & Sledge 1954) and $n=104$ from New Zealand (Brownlie 1961), Himalayas (Mehra & Verma 1960, Roy et al. 1971) and China (Wang et al. 1984). The majority of species in *Hypolepis* have been reported to show $n=52$ (4x) or $n=104$ (8x) (Brownsey 1983). The counts of $n=98$ and $2n=200$ in Japanese plants are probably derived from aneuploidy. The chromosomes observed were very small, ranging 0.8–2.7 $\mu$m in length.

33) *Lindsaea commixta* Tagawa (Fig. 6)

$2n=204$ (5x?): Isl. Amamioshima, Kagoshima Pref. (no. 532907).

Previously reported as $n=c130$ (3x-apog.) from Isl. Ishigakijima, Okinawa Pref. (Mitui 1976). The spore formation of the present plant was irregular, producing numerous abortive spores as well as a few large and presumably viable spores. Although the base chromosome number of this species is still uncertain, the present specimen is probably a hybrid between different cytotypes within this species complex.

34) *Lygodium japonicum* (Thunb.) Sw. (Fig. 7)

$2n=58$ (2x): Isl. Amamioshima, Kagoshima Pref. (no. 532908).

Previously reported as $2n=58$ (2x) from southern China (Roy & Manton 1965) and $n=58$ (4x) from Kumamoto Pref. (Mitui 1965) and Taiwan (Tsai & Shieh 1983). As the central lobes of leaflets are elongated, the present specimen corresponds to forma *elongatum* v. A. v. R.

35) *Microlepia marginata* (Panzer) C. Chr. var. *bipinnata* Makino=*M. x bipinnata* (Makino) Shimura (Fig. 8)

$2n=126$ (3x): Susami, Wakayama Pref. (no. 532909) ; Boroishiyama, Miyazaki Pref. (nos. 532910-1).

Previously reported as $n=c126/2$ (3x) from a cultivated plant (unknown origin) (Mitui 1968), $n=86$ (4x) from Taiwan (Chen 1969) and $2n=168$ (4x-hybrid) from Shizuoka Pref. (Nakato & Serizawa 1981). The present materials
produced many abortive spores, and is considered to be a hybrid between *M. strigosa* (2n=84, 2x) and a tetraploid cytotype (2n=168) of *M. marginata*.

36) *Pseudophegopteris subaurita* (Tagawa) Ching (Fig. 9)
2n=62 (2x); Isl. Amamioshima, Kagoshima Pref. (nos. 532912-3).

Previously reported as n=31 from Isl. Amamioshima, Isl. Okinawa (Mitui 1967, 1976), Taiwan (Tsai & Shieh 1983) and from a cultivated plant (unknown origin) (Kurita 1963). The chromosomes observed were very small, ranging 0.8-1.8 μm in length.

37) *Pteris fauriei* Hieron. (Figs. 10-12)
2n=58 (2x); Isl. Hachijojima, Tokyo Pref. (no. 532914); Isl. Iriomotejima, Okinawa Pref. (nos. 532915-6).

2n=87 (3x); Isl. Hachijojima, Tokyo Pref. (no. 532917); Isl. Yakushima, (nos. 532918-24), Isl. Amamioshima (nos. 532925-8), Kagoshima Pref.
2n=89 (incl. 2 small chromosomes, 3x): Isl. Miyakejima (no. 532929), Isl. Hachijojima (no. 532930), Tokyo Pref.

Previously reported as n=29 or 2n=58 (2x) from China (Roy & Holtum 1965) and Isl. Iriomotejima (Mitui 1976), and n=87 or 2n=87 (apog. 3x) from Taiwan (Tsai & Shieh 1983), Japan (Walker 1962), Isl. Yakushima (Mitui 1966) and Isl. Amamioshima (Kawakami 1979). In the present diploids, reproductive type may be sexual (64 spores per sporangium) in the plant from Isl. Iriomotejima, but it could not be ascertained in that from Isl. Hachijojima, due to lack of fertile leaves. Considering their good spore formations, the triploids (2n=87) are probably of apogamous type. It is noted that the aneuploid with 2n=89, in which two very small chromosomes were included, was detected for the first
time in two plants from the Izu Islands. In Fig. 11, both of the small chromosomes were 1.6 μm and the others were 2.4-5.8 μm in length. As the two 2n=89 plants produced many normal-shaped spores, their reproductive type is considered to be apogamous.

38) Pteris grevilleana Wall. ex Agardh (Fig. 13)

2n=58 (2x): Isl. Yakushima, Kagoshima Pref. (no. 532931).

Previously reported as n=58 (apog. 2x) from the same island (Shimura & Matsumoto 1976) and n=c116 and 2n=c116 (apog. 4x) from Malaya (Walker 1962). As the present plant produced good 32 spores in a sporangium, the reproductive mode seems to be apogamous.

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References


前報に続いて、シダ植物10種の染色体数を報告した。調査した種類は、29) ヤリノホクリハラン、30) アマミシダ、31) クラガリシダ、32) イワヒメラビ、33) シンエダウチホングシダ、34) カニクサ（ナガバックニクサに該当する個体）、35) クジャクモトシド、36) ミミガタシダ、37) ハチジョウシダ、38) アンガタシダである。クラガリシダは長野県産の株で 2n=104 が観察されたので、x=26 の 4 倍体か x=52 の 2 倍体と考えられる。台湾から n=36 が報告されているが、再確認の必要がある。シエダウチホングシダでは n=130 が知られていたが、茨城大島産の株で 2n=204 が観察された。この個体の胞子形成は異常で大型の充実した胞子もできるが、萎縮した胞子が多く形成される。これらの結果から、シンエダウチホングシダは細胞学的に多型な species complex とみなせる。ハチジョウシダでは伊豆諸島産の 2 個体で小型染色体を 2 本含んだ 2n=89 の異数体が見いだされた。充実した胞子が形成されるので無配生殖型をすると考えられる。